

June – December

2019 – 2020

Research Newsletter



Volume 02 | Issue 01

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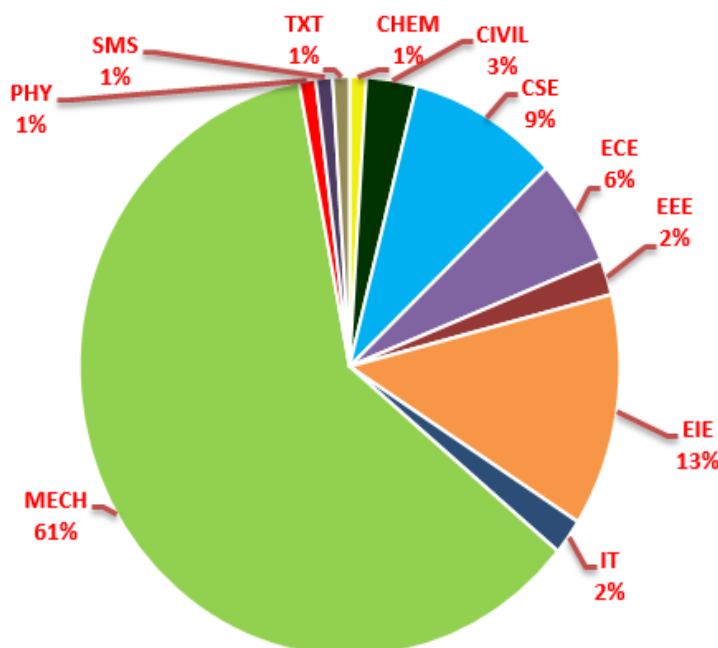
Dr. M. Thirumoorthy

DRDO Hyderabad

HIGHLIGHTS

No. of Scopus indexed publications : **133**
No. of Web of Science indexed publications : **81**
No. of patents filed : **56**
No. of patents published : **7**
No. of Ph.D. degrees awarded : **14**
No. of Ph.D. holders : **165**
No. of FT scholars pursuing Ph.D. : **31**
No. of PT scholars pursuing Ph.D. : **255**
No. of recognized research centres : **13**
No. of Ph.D. scholars admitted : **13**
(Jul'19 Session)
No. of recognized research supervisors : **93**
No. of research programmes organized : **33**
No. of ongoing funded projects : **21**
Total value of funded projects : **Rs. 3,76,86,000**
(ongoing)

ONGOING CONSULTANCY ACTIVITIES



TOTAL REVENUE GENERATED : Rs. 17,53,794.60

RESEARCH METRICS

INSTITUTE-LEVEL

h-index of the institute (1996 to 2019) :

32 (Scopus)

27 (Web of Science)

Total no. of Citations (1996 to 2019) :

8565 (Scopus)

4455 (Web of Science)

Total no. of Publications (1996 to 2019) :

2251 (Scopus)

1018 (Web of Science)

AUTHOR-LEVEL

Faculty member with highest h-index



Dr M L N Madhu Mohan,
Professor, Department of
Electronics and Communication
Engineering

h-index : **22**

Total no. of Citations : **1237**

ARTICLE-LEVEL

Top article with highest number of citations



Dr S Jegadheeswaran, Professor
– Research & Development

Performance enhancement in latent
heat thermal storage system: A review.
Renewable and Sustainable Energy
Reviews, 13(9), 2225-2244

Cited by : **377**

AICTE SPONSORED PROJECT UNDER RESEARCH PROMOTION SCHEME (RPS)

Wireless automatic quality domestic water distribution and wastage reduction management system



Investigator : Dr C Ganesh Babu, Professor,
Department of EIE

Grant : Rs.3,71,470

Funding agency : AICTE

The objective of the research is to provide equal and healthy water to the people without any wastage. In most of the areas, the overhead tanks are filled on a timely basis and overfilling is not taken care properly, by which major amount of water is getting wasted. In order to avoid such issues, we can fit level sensor, so that, when the water level reaches maximum position, the inlet valve closes automatically. The secondary issue is related to the leakage in the pipe which cannot be located manually. The flow meters are attached to all the residential buildings and outlet pipes of the tank. The overhead tanks are not cleaned on a regular basis so we can implement an automatic cleaning system with echo enzyme to avoid impure water. The automatic organic chlorination can be implemented so that bacteria and germs will be killed and healthy water can be provided.

SERB SPONSORED RESEARCH VISIT TO UNITED STATES OF AMERICA

Gordon Research Conference on Photochemistry, Massachusetts, USA



Dr V Sathish, Assistant Professor, Department of Chemistry presented a paper in "Gordon Research Conference on Photochemistry" at Stonehill College, Massachusetts, USA.

GRC is a prestigious conference with an international collection of world leading scientists engaged in research on photochemistry. He presented the work on tripodal pyrazole-based compounds with aggregation induced emission properties and their use in the detection of nitroaromatics in the solid, liquid and vapor phases. Besides, he learned new ideas towards the development of sensors through fluorescence measurements from reputed scientists. He interacted with elite scientists in the field of photochemistry and visited Harvard University & Massachusetts Institute of Technology.

Grantee : Dr V Sathish, Assistant Professor,
Dept of Chemistry

Grant : Rs.2,09,303

Funding agency : SERB

Period : 14.07.2019 to 19.07.2019

PhD Awarded Full Time Scholars

Name of the scholar	Dept.	Area of Research	Title of Thesis
Dr Chandrasekar G	Physics	Liquid Crystals	Optimal, thermal and spectral studies of hydrogen bonded liquid crystals and their binaries
Dr Prema R	CSE	Data Analysis	Feature selection and classification for microarray data analysis
Dr Nareshkumar M	Biotech	Ligno-Cellulosic Ethanol Production	Development of novel and intensified bio refinery technology using white rot fungi for sustainable production of cellulosic bio ethanol

Synthesis of hydrogen bonded ferroelectric liquid crystals for optical modulator and shutter



Investigator :

Dr. V. N. Vijayakumar, Assistant Professor (Level III), Dept. of Physics

Funding agency :

Department of Atomic Energy (DAE) - Board of Research in Nuclear Sciences (BRNS)

Grant :

Rs.10,97,250

Area of research : Liquid Crystals

Outline :

The different types of new hydrogen bonded ferroelectric liquid crystals (HBFLCs) are successfully designed and synthesized. Some of the appropriate HBFLC complexes are identified for optical modulation and shutter from their detailed optical and thermal characterizations. The suitable HBFLC complex for optical modulator is further studied using dielectric investigations and specially designed light modulators. The obtained results of the HBFLC complex for optical modulator devices are published in peer reviewed international journals. The thermochromic liquid crystal is designed and synthesized for the photonic device applications.

Outcomes :

No. of publications : 16

No. of conference presentations : 14

No. of staff members trained : 5 Ph.D. scholars; 11 PG students; 30 UG students

Name of major equipment(s) procured and their cost : Hot and Cold stage for Microscope - Rs 7.0 Lakhs

Utilization : Research Scholars 100%, B.Sc students 40%, M.Sc and M.Phil students 70%, BE and B.Tech students 30%

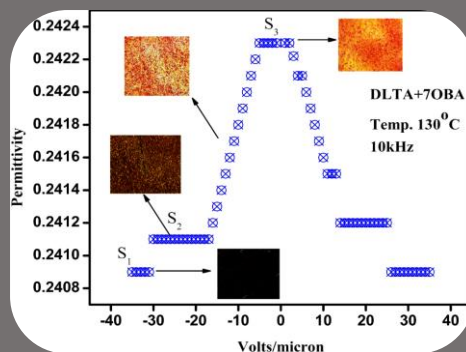
Patent(s) filed : 2

1. Application Number: 201941026961; Title: Hydrogen Bonded Liquid Crystal with Antibacterial Activity; Date: 05/07/2019; Docket No: 56033; CBR No: 21539.

2. Application Number: 201941036370; Title: Interesting Observation of Induced Thermochromism in Polymesomorphous Hydrogen Bonded Ferroelectric Liquid Crystal; Date: 10/09/2019; Docket No: 75859; CBR No: 29314.



Hot & Cold stage in optical characterization of HBFLC complex



Optical response of HBFLC mesogens for different external stimulus

Science Academies' Sponsored Research Fellowship at **CSIR-CMERI** West Bengal



Fellowship Awardee :

Mr S Vignesh, Assistant Professor,
Department of Mechatronics and R&D

Duration : 08 Weeks

Area of Research : Evaporative Liquid Droplet

Mr. Vignesh's research focuses on the analysis of the impact of evaporative liquid droplets on the solid objects at high temperature. The research related to droplet evaporation near Leidenfrost point has many technical applications, such as, re-wetting in the case of fuel rods in nuclear reactor, heat treating of metallic alloys at the time of spray cooling, and oil droplet impingement on turbine engines. He was provided an opportunity at one of the constituent CSIR laboratories and the only national level research institute in the field of mechanical engineering, Central Mechanical Engineering Research Institute (CMERI) under the guidance of Dr Pranab Samanta, Senior Scientist, Surface Engineering and Tribology.

Russian Federation's Post-doctoral Research Fellowship at **SUSU** Chelyabinsk Russia



Fellowship Awardee :

Dr K Rajakumar, Assistant Professor,
Department of Chemistry

Duration : 12 Months

Area of Research : Organic Chemistry

Dr. Rajakumar's research focuses on the synthesis of ethynyl derivatives of heavy polycyclic aromatic molecules at Nanotechnology Education and Research Centre, South Ural State University, Chelyabinsk, Russia under the guidance of Prof. Dmitry Zharebtsov. The design and synthesis of polycyclic aromatic hydrocarbons of luminescent molecular materials is one of the most attractive challenges at the frontier of fundamental research and applications. The design and synthesis of low-band gap conjugated polymers have increasing attention in recent years owing to their wide usage in various fields, such as, OLEDs, organic solar cells & OFETs.

SPONSORED RESEARCH

Science Academies' Sponsored Research Fellowship at NIT Durgapur



Fellowship Awardee :

Ms K Deepika, Assistant Professor, Department of Biotechnology

Duration : 08 Weeks

Area of Research : Bio-kinetic investigation of *Exiguobacterium Aurantiacum*

Ms. Deepika's research focuses on the bio-kinetic investigation of *Exiguobacterium aurantiacum* using 2, 4- Dichlorophenoxyacetic acid as a substrate under the guidance of Dr Tamal Mandal, Professor, Chemical Engineering. The biological remediation is the most promising technique to decontaminate the soil and aquatic system. The microorganisms are isolated from contaminated paddy fields in Durgapur. After examination, it was confirmed as *Exiguobacterium Aurantiacum* by 16S-rDNA analysis. The investigation clearly indicated that the microbe actively takes up 2, 4-D as a carbon source. Further, an increase in the concentration of 2, 4-D leads to microbial deterioration which clearly shows the substrate inhibition.

STUDENT's RESEARCH RECOGNITION

Awardee :

Ms Jadhav Snehal Mahesh
Research Associate
Dept of Food Tech



Scheme :

Chhatrapati Shahu Maharaj National Research Fellowship (SARTHI), Government of Maharashtra

Research Area : Nutraceutical and functional food

Fellowship : Rs.25,000 per month for 2 years and Rs.28,000 per month for 3 years excluding contingency and other allowances

Mentor : Dr K Ramalakshmi, Department of Food Technology

EXPERT INTERACTION



Mr Jaswanth Jenney, Solution Consultant, Clarivate Analytics shared his views on Journal Citation Index, Search refinement & Customization. He also added the features of Web of Science – Science Citation Indexing Source during the interaction. The support service from Web of Science for improving the academic research was also highlighted.

STUDENT'S RESEARCH INITIATIVE

Science Academies' Sponsored Research Fellowship at Pondicherry University



Fellowship Awardee :

Ms S Anusriha (172BT114), UG Student, Department of Biotechnology

Mentor : Dr George Seghal Kiran, Assistant Professor, Pondicherry University

Ms Anusriha has been provided an opportunity to work at Pondicherry University for a period of two months. The research fellowship was offered by Indian Academy of Sciences, Bengaluru based on her previous research achievements and academic credentials. She worked on the project titled "Physico-chemical characterization and bio-film disruption potential of biosurfactant nano-emulsions" during May-July 2019 as a Summer Research Fellow under the supervision of Dr George Seghal Kiran. In addition to that, she has interest in the area of stem cell technology coupled with cancer biology. Her recent research interest is found to be estimation and enumeration of the specific characteristics of bio-polymers in scaffold preparation. She also utilizes an approach to couple scaffold with stem cells in regenerative medicine.

DST SPONSORED FACULTY DEVELOPMENT PROGRAMME

Entrepreneurship in Geo-Environmental Engineering



Coordinators : Dr B Soundara, Professor, Dept of Civil Engg & Dr K Saravanan, Associate Professor, Dept of Fashion Technology

Funding agency : DST-NIMAT

Grant : Rs.2,50,000

Department of Science and Technology has sponsored a two-week Faculty Development Programme on "Entrepreneurship in Geo-environmental Engineering" through National Implementing and Monitoring Agency for Training (NIMAT). The programme has been organized by the faculty members of Civil Engineering and Fashion Technology in the Conference Hall during 25 Nov 2019 – 07 Dec 2019. The participants of the programme were addressed by Er. Rajayogan, President, ASCE India Section - Southern Region and Dr. V. K. Stalin, Professor, Anna University. They shared valuable inputs about the scope and opportunities of geo-environmental engineering in India. There were eminent personalities from various reputed organizations who shared their knowledge and enlightened the minds of faculty members from various institutions across the state. At the end of this course, the faculty members were expected to enhance the ability of their students in terms of entrepreneurial skills.

SERB's FINANCIAL SUPPORT FOR CONFERENCE

Recent Trends in Chemistry of Materials



Grantee : Dr P Muthukumar, Assistant Professor, Dept of Chemistry

Funding agency : SERB

Grant : Rs.75,000

NCRTCM-2019 featured a wide variety of invited and contributed lectures from speakers with expertise in the fields of chemistry and materials science, as well as oral and poster sessions during 11 Oct 2019 – 12 Oct 2019. The chief guest Padma Shri Rajagopalan Vasudevan addressed the delegates with a wonderful key note address. Padma Shri R. Vasudevan is an Indian scientist who has worked mainly in the field of waste management. He has developed an innovative method to reuse plastic waste to construct better, more durable and very cost-effective roads. This method will help in making roads much faster and also will save the environment from hazardous effects. The roads also show greater resistance to damages caused by heavy rains. The conference had eight invited speakers from CSIR-CECRI, IITs and central and state universities.

GRANT FOR ORGANIZING CONFERENCE – FUNDED BY AICTE

Fashion Forecasting and Trend analysis through WGSN



Programme Coordinator : Dr K Saravanan, Professor, Dept of Fashion Technology

Funding agency : AICTE

Grant : Rs.5,00,000

Forecasting is a vital part of design process. Prediction of good and bad for the future is the major goal of a designer before he/she develops a solution (be it a product / service) for a requirement. To get it done, trend analysis is usually followed to do forecasting. This motivated the faculty members of Fashion Technology / Textile Technology to create a buzz by organizing a National Conference on “Fashion Forecasting and Trend Analysis” during October 3-5, 2019.

Dr. Kaustav Sen Gupta, Youth Trend Analyst and Associate Professor - NIFT Chennai and Mrs. Shaswathi Sen Gupta, Founder of Inlink Trust were the resource persons. A leading Fashion Illustrator from Chennai, Mr Ben Philip was the keynote speaker. There were 60 participants from various institutes across the state. The conference included a brainstorming session followed by the workshop.

PhD Awarded - BIT Faculty Members

Name of the faculty member		Dept.	Area of Research	Title of Thesis
Dr Hamsagayathri P Assistant Professor (Level II)		ECE	Antenna Design and Fabrication	Investigations on the performance of printed antenna for breast cancer
Dr Matheswaran A Assistant Professor (Level III)		EEE	Power Convertors	Certain investigations on performance improvement of solar PV systems using modified quadratic boost converter
Dr Shoukath Ali K Assistant Professor (Level II)		ECE	Wireless Systems	Investigations on cooperative relaying protocols for wireless systems
Dr Rajasekar S S Assistant Professor		CSE	Wireless Networks	Investigation on optimized location-based service selection in wireless networks
Dr Thanabal V Associate Professor		Textile	Coir Fibre	Processing of unconventional fibres - coir
Dr Rajanandkumar R Assistant Professor		Physics	Liquid Crystals	Investigations of hydrogen bonded liquid crystals formed by dicarboxylic acids
Dr Ranganathan B V Assistant Professor (Level II)		Biotech	Microalgal Species	Studies on integrated approach of garcinia cambogia washwater treatment using microalgal species

Adsorptive removal of antibiotics from the water bodies



Student Name :

Mr Dharun Nithish Kumar S (172BT132), UG Scholar, Dept of Biotechnology

Place of Research : Dept. of Chemical Engineering, NIT-DGP

Duration : 02 Months

Area of Research : Adsorption

Mentor : Prof. Gopinath Halder, Head, Chemical Engineering, NIT-DGP

Mr. Dharun's research focuses on adsorptive removal of enrofloxacin by base activated bio char obtained from coconut shell. The activated carbon has been obtained by carbonation from green coconut shell and base activated by KOH. The adsorption efficiency of the activated carbon on the antibiotic Enrofloxacin was studied under various parameters, such as, pH, temperature, concentration of antibiotic, time, agitation speed and adsorbent dose. The optimum conditions were found to be 5, 25°C, 10ppm, 15 hours, 180rpm, 3g/L on pH, temperature, concentration of antibiotic, time, agitation speed and adsorbent dose respectively.

RUFFORD (UK) SPONSORED PROJECT – COMPLETED

Field implementation and design up-gradation of automated roadkill prevention system



Investigator : Dr. Sanjoy Deb, Associate Professor, Department of ECE

Funding agency : Rufford Foundation, UK

Grant : £4500

Nature of work : Roadkill Prevention System

Outline :

According to the Indian Ministry of Forest and Environment report, Human-Elephant-Conflict (HEC) is causing death of an average of 350 people and large number of elephants. It leads to destruction of an average of 330 sq. km. of crops, compensation of 100 million dollars from government. An early detection of elephant near human habitat, railway or road track especially at night time and generation of a following alert is the best solution to this conflict.

Outcomes :

Product :

Roadkill Prevention System

Implementation :

Two units are installed

- Bhavanisagar dam
- Punjur



Smart fence for early elephant warning



Investigator :

Dr. Sanjoy Deb, Associate Professor,
Department of ECE

Funding agency :

International Elephant Foundation (IEF), United States

Grant :

\$3200

Nature of work :

Prototype design and field implementation

Notable accomplishments :

1. The Roadkill Prevention System (RPS) developed and implemented is the one and only functioning system of its kind in India.
2. The animal roadkill rate is significantly reduced at the two points where the system units are implemented.
3. Technological innovative findings of RPS are incorporated in Elephant Early Warning System (EEWS)
4. During the recent years, EEWS has been implemented at BRT Tiger Reserve (Karnataka), Hasanur and Sathyamangalam Divisions of Sathyamangalam Tiger Reserve (Tamil Nadu), Ajodhya Hill and Forest Reserve Area (Purulia, West Bengal), Parsa Wildlife Reserve (Nepal) and many other places under collaborative consultancy project from Government of India and different NGOs.

Outcomes :

1. The team members have developed a product “Elephant Early Warning System (EEWS)”.
2. The project has been successfully implemented in two different locations in Tamil Nadu.

Areas of Implementation:

- Sathyamangalam Tiger Reserve
- Bhavanisagar Dam

3. The team members have filed a patent based on the concept of early warning system.



DST SPONSORED ENTREPRENEURSHIP DEVELOPMENT PROGRAM



Industrial Internet of Things (IIoT)

Grantee : Dr. K. Premalatha, Professor, Department of Computer Science and Engineering

Funding agency : DST-NIMAT | **Grant :** Rs.3,00,000

The Industrial Internet of Things (IIoT), also known as Industry 4.0, brings together brilliant machines, advanced analytics, and people at work. A digital transformation is underway; driving huge change across all industries. The driving philosophy behind IIoT is that smart machines are not only better than humans at capturing and analyzing data in real time, they are better at communicating important information that can be used to drive business decisions faster and more accurately. The IIoT is enabled by technologies such as cyber security, cloud computing, edge computing, mobile technologies, machine-to-machine, 3D printing, advanced robotics, big data, internet of things, RFID technology, and cognitive computing. This workshop is meant for entrepreneurs who wish to come up to speed with the new technology and to use it in their startups and business. This hands-on workshop provides the opportunity of learning the technologies, strategies and case studies to advance the career.

AICTE's SPONSORSHIP TO PARTICIPATE IN COMPETITION ABROAD

32nd ASCE NCCC 2019 - Florida, USA



Participants : Mr Manjunath N V (Mentor), Dept. of Civil Engg and a team of 15 student members

Sponsoring Agency & Grant : Rs.10,00,000 (AICTE) & \$1505.73 (ASCE)

Place : Florida Institute of Technology, USA

ASCE National Concrete Canoe Competition was hosted by the Florida Institute of Technology, Melbourne, FL, USA during 7-9 June 2019. For this competition, each participating team has to build their own canoe using concrete and ensure it remains sturdy, light in the water. This would mean providing a practical application of the engineering principles and challenging the knowledge, creativity and stamina while showcasing the versatility and durability of concrete as a building material. After detailed planning and dedicated execution by each member of the team "BITians YALIVIL" with 40 aspiring Civil Engineering undergrads, they participated in 32nd ASCE NCCC 2019. They are the first Indian team to represent ASCE – INDIA Section in the National Concrete Canoe Competition at Florida Institute of Technology, Melbourne, FL, USA. Bannari Amman Institute of Technology is making concrete canoe history, marking the first time in NCCC history that a team from India is competing.

CSIR's SPONSORSHIP TO ORGANIZE AN INTERNATIONAL CONFERENCE

International Conference on Advances in Materials Research



Grantee : Dr K Sivakumar, Senior Professor & Dean, Dept of Mechanical Engineering

Funding agency : CSIR - Council of Scientific and Industrial Research

Grant : Rs.50,000

The department of mechanical engineering has been granted a sponsorship for organizing an international conference on advances in materials research. The financial support was provided by CSIR – Council of Scientific and Industrial Research, Govt. of India. The chief guest Dr. Hee Joon Lee, Associate Professor, Department of Mechanical Engineering, Kookmin University, South Korea delivered the inaugural address. He shared the research initiatives carried out by the members of his team at South Korea. The special address has been provided by Dr K Sankaranarayanan, Director, NIT Puducherry. The souvenir of ICAMR 2019 has been released by the chief guest and special invitee. There were 256 research articles published in the form of conference proceedings. The presented manuscripts were recommended for potential publication in appropriate journals (Elsevier and Springer). The second day of ICAMR-2019 had Dr Raghu V Prakash, IIT Madras as keynote speaker and Dr T Ram Prabhu, DRDO as special invitee.

TNSCST SPONSORED RESEARCH PROJECT - ONGOING

Body heat operated wearable mini torch light for rural areas



Investigator : Dr Sanjoy Deb, Associate Professor, Department of ECE

Funding agency : TNSCST – S&T

Grant : Rs.4,15,000

Government of Tamilnadu has sanctioned a research project to Dr Sanjoy Deb through Tamil Nadu State Council for Science and Technology (TNSCST) – SAT. He will be responsible for developing a prototype coupled with field trials for body heat operated wearable mini torch light for rural areas. The project has been sanctioned for a period of two years. The development of indigenous prototype titled “Wearable Mini Torch Light (WMTL)” is a novel research to be carried out by the faculty members of BIT. Once the prototype of WMTL is developed, it will be powered by human body heat using Thermoelectric Generator (TEG).

Implementing textured surface for drag reduction & anti-icing in remotely piloted aircraft system



Investigator :

Dr. S. Gollakota (Retd. Scientist – DRDO)

Co-Investigator :

Mr V Hariprasad, Assistant Professor (Level II),
Department of Aeronautical Engineering

Funding agency :

DRDO – Aeronautical Development
Establishment (ADE), Bangalore

Grant : Rs.4,50,000

Nature of work : Fabrication of ultrahydrophobic surface through novel method

Objectives :

1. Reduction of drag in RPAS by enabling the surfaces as Ultra hydrophobic
2. Enhancement of the novel method to fabricate Ultra hydrophobic surface
3. Reduction of ice formation on the surfaces of aircraft and drone wing

Outline :

The wettability of microgroove patterned SS304 surface with different groove geometries was investigated and found the relation between surface morphology and wetting characteristics. The same morphology will be impinged on the prototype in the next phase for aerodynamic study. Microgroove patterned surface shows better wetting property when compared to flat surface with contact angle more than 90 degree and acts as hydrophobic surface. Microgroove patterned surface shows anisotropic wetting nature i.e., its wetting characteristics vary from one direction to another due to the presence of ridges. It is proved that all the geometrical dimensions of the microgroove pattern were not supporting wettability. Proper selection of RW/CW and solid fraction is necessary to optimize the wetting characteristics of microgroove pattern surface

Outcomes :

No. of Publications : 2

- [1] Vivek Anand, S. Gollakota, V. Hariprasad, N. Shunmugavelu, Ashifkhan, and V. Arumugam, Wettability characteristics of microgroove patterned SS304 stainless steel surfaces, AIP Conference Proceedings 2128, 040001 (2019); <https://doi.org/10.1063/1.5117963>, Published Online: 23 July 2019.
- [2] Vivek Anand, S. Gollakota, V. Hariprasad, Ashifkhan, N. Shunmugavelu, and V. Arumugam, Role of micropatterns on wettability and corrosion characteristics of SS304 steel surface, AIP Conference Proceedings 2128, 040006 (2019); <https://doi.org/10.1063/1.5117968>, Published Online: 23 July 2019.

Ecosmart formulation of low - cost novel plant extract based nanoemulsion for larvicidal and repellent application



Investigator :

Dr. Sudarshana Deepa, Associate Professor, Dept. of Biotechnology

Funding agency :

Department of Science and Technology (DST) – Science and Engineering Research Board (SERB)

Grant :

Rs.23,80,000

Nature of work :

Optimizing the nano-emulsion and characterization of the product

Objectives :

1. To survey/interview on ethnomedical practice among the tribal community on medicinal plants which are used for larvicidal and repellent activity (Study area - Villamkobai Village and Kadambur Hills, Sathyamangalam Forest Division)
2. To test the effectiveness of plant extract for larvicidal and repellent activity against *Anopheles stephensi*, *Aedes aegypti* and *Culex quinquefasciatus*.
3. To standardize and formulate plant extract based nanoemulsions for larvicidal and repellent activity.
4. To characterize the plant extract based nanoemulsion (Droplet size determination, physiochemical characterization – pH, viscosity, temperature, stability, Zeta potential, Shape of emulsion (Atomic Force Microscope), morphology of nanoemulsion (Transmission electron microscope).

Suggestions for commercial application :

The incorporation of nano emulsion and repellent compounds along with camphor balls is in negotiation stage with the local producers in Sathyamangalam. The result of the successful product will be a mosquito repellent camphor balls which will either on ignition or placed in the living room would liberate repellent scents.

Outcomes :

No. of publications : 01
No. of patents filed : 02
No. of technical training sessions organized : 08
No. of PhDs produced : 01

Research achievements :

1. MoU has been signed with ICMR - Madurai
2. Science behind emulsion formation has been well studied and optimization procedure has been simplified.
3. The mode of sensing by mosquitoes has been well studied and the alternate has been formulated accordingly in compliance with the environment and human safety

DST SPONSORED ENTREPRENEURSHIP PROGRAMME

NIMAT – Entrepreneurship Awareness Camp



Grantee : Ms M Senthamarai, Assistant Professor (Level II) Department of Biotechnology

Funding agency : DST-NIMAT

Grant : Rs.60,000

Udyami - Entrepreneurship Development Cell of BIT has received a financial support from National Science & Technology Entrepreneurship Development Board (NSTEDB), Dept. of Science & Technology, Govt. of India under the scheme DST -NIMAT to promote & strengthen science & technology based entrepreneurship. Since its inception in the year 2008, “Udyami” is continuously getting recognized through financial support from DST for organizing “Entrepreneurship Awareness Camp”. This camp will be organized for three days with the eminent resource persons and first generation student entrepreneurs and industrialists. This camp will support 75 students with an opportunity to develop appropriate skills related to entrepreneurship.

FACULTY’S RESEARCH @ INSTITUTES OF NATIONAL IMPORTANCE

Summer Research Internship at NIT Surathkal & IIT Guwahati



Faculty name :

Mr Y Arivu, Assistant Professor, Department of Mechanical Engineering

Place of Research : NIT Surathkal and IIT Guwahati

Duration : 02 Months

Mr Arivu has been provided an opportunity to undergo summer research internship for a period of two months at National Institute of Technology, Surathkal and Indian Institute of Technology, Roorkee. During the internship period, he was able to learn the basics of SEM and its applications, basics of crystallography related to electron back scattered diffraction and its usefulness in the characterization of microstructures, energy dispersive spectroscopy, and advanced microstructure characterization techniques such as Scanning Transmission Electron Microscope (STEM), Electron Channeling Contrast Imaging (ECCI) and Electron Energy Loss Spectroscopy (EELS) under the guidance of Dr Sumanth Govindarajan (NIT Surathkal) and Dr K S Suresh (IIT Guwahati). He was also engaged in the field of Tribology and handled X-Ray Diffractometer, SEM & TEM.

Summer Research Internship at Sunway University



Faculty name :

Mr B Kalidasan, Assistant Professor,
Department of Mechanical Engineering

Place of Research : Sunway University,
Malaysia

Duration : 02 Weeks

Mr Kalidasan has been provided an opportunity to undergo Summer Research Internship for a period of two weeks at Research Centre for Nano Materials and Energy Technology (RCNMET), School of Science and Technology, Sunway University, Malaysia. He worked under the guidance of Dr Adarsh Kumar Pandey and Dr Syed Shahabuddin. During this period, he worked on sample preparation and characterization of nano-enhanced phase change materials. As a part of training, he was exposed to various equipments such as DSC, TGA, FTIR and UV-Vis Spectrometer. The research was further extended towards the synthesis of nano-composite based phase change materials for solar thermal application systems. In addition to that, he has delivered a lecture on the current practices and experimental approaches in phase change materials integrated solar thermal energy systems.

CONFERENCES ORGANIZED

Dept(s)	Name of the Conference	Convener
Food Tech	International Conference on Functional Foods and Nutraceuticals	Dr Shahir S
Aero, Auto, Mech, MTRS	International Conference on Advances in Materials Processing and Characterization	Dr Senthil Kumar K L
CSE	National Conference on Recent Trends in Ubiquitous Computing & Communication Technology	Dr Gomathy B
IT	National Conference on Open Data Sciences and Computing	Dr Daniel Madan Raja S
EEE	National Conference on Cutting Edge Technologies in Power Conversion and Industrial Drives	Dr Kamatchi Kannan V
Bio Tech, Fashion Tech	National Conference on Application of Natural Bioactive compounds in Textiles and Biotech Industries	Dr Arunava Das
ECE	International Conference on Liquid Crystals, Liquid Crystalline Polymers and Nanosystems	Dr Madhu Mohan MLN

SELECTED RECENT PUBLICATIONS

1. **Rohini, P., Pongali Sathya Prabu, N., & Madhu Mohan, M. L. N.** (2019). Studies on thermotropic hydrogen bonded binary mixtures. *Molecular Crystals and Liquid Crystals*, 690(1), 23-42. doi:10.1080/15421406.2019.1680160
2. Vignesh, V., & **Przemalatha, K.** (2019). Optimal route path sustainability in military information system with reduced interference effect. *Journal of Supercomputing*, 75(9), 6106-6117. doi:10.1007/s11227-018-2667-0
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